Claims: I claim as my invention:

- An acoustic waveguide for propagating sound radiation from an acoustic transducer into a sound field
  wherein one or more sections along the length of said waveguide have bounding surfaces that
  approximate coordinates of the coordinate systems, Elliptic Cylinder and Prolate Spheroidal.
  - The waveguide of claim 1 wherein;the first waveguide section is Elliptic Cylinder and the second is Prolate Spheroidal.
  - The waveguide of claim 1 wherein;the mouth termination has a radius to the baffle.
  - 4. The waveguide of claim 2 wherein; the mouth termination has a radius to the baffle.
- 5. An acoustic waveguide for propagating sound radiation from an acoustic transducer into a sound field wherein the length of said waveguide has a bounding surface that approximates coordinates of the coordinate system Elliptic Cylinder.
  - 6. The waveguide of claim 5 wherein; the mouth termination has a radius to the baffle.